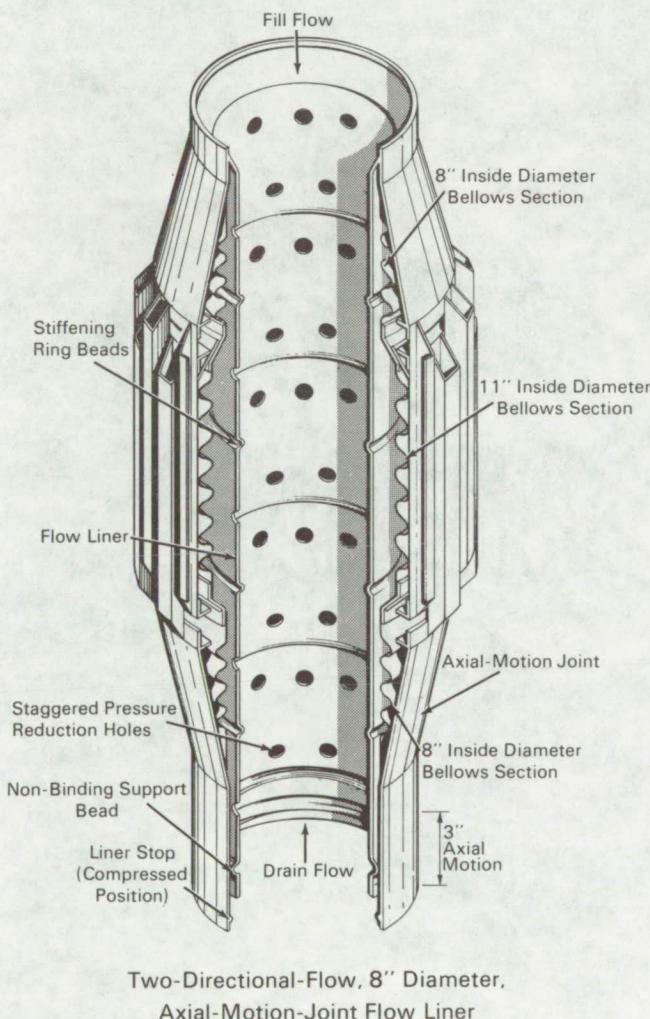


NASA TECH BRIEF



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Two-Directional-Flow, Axial-Motion-Joint Flow Liner



The problem:

To design a flow liner capable of eliminating high-cycle fatigue in ducts carrying cryogenic fluids.

The solution:

Use a 3-inch axial motion joint consisting of two end bellows sections of 8-inch inside diameter and an intermediate section of 11-inch inside diameter.

How it's done:

The flow liner is designed for limited axial motion of the duct with structural stability by use of stiffening ring beads and a non-binding bead. This configuration is capable of handling two-directional, high-velocity cryogenic liquid flow with a 3-inch axial motion without binding within a 25-inch length. Staggered holes within the liner wall reduce the pressure gradient, and the liner isolates the inner surfaces of the bellows from the high velocity fluid flow.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B70-10166

Patent status:

No patent action is contemplated by NASA.

Source: George M. Innes and Lloyd L. Bissing of
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